AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES	
J	1	22

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0006	27-Aug-2002		ED 01-024

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
USACE, CONTRACTING DIVISION 7400 LEAKE AVE, ATTN: CEVMN-CT, RM 172 NEW ORLEANS LA 70118	DACW29	**See Item 6**	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. DACW29-02-B-0054
	X	9B. DATED (SEE ITEM 11) 21-May-2002
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The above-numbered solicitation for Gulf Intracoastal Waterway, Inner Harbor Navigation Canal Lock, Southeast Guidewall and Dolphin Replacement, Orleans Parish, LA, is hereby amended as follows:

Changes are made to the Technical Provisions and Drawings as shown on the following pages.

Bid Opening Date is re-established as follows:

BID OPENING DATE:

BID OPENING DATE IS HEREBY ESTABLISHED AS 6 SEPTEMBER 2002, 2:00 P.M., LOCAL TIME AT PLACE OF BID OPENING.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 21-Aug-2002

SECTION 00010

Page 4, add the following new note as:

"Note 4: If bids include foreign materials, including sheetpile, the material must be shipped on a U.S. flag vessel (please refer to clauses FAR 52.247-64 and DFAR 252.247-7023). To obtain a waiver could take a significant amount of time, and there is no guarantee that a waiver will be granted. This process could impact the delivery schedule, and the Government assumes no responsibility due any delays caused by the waiver process."

SECTION 01100

1. Page 7, paragraph 5. Delete this paragraph in its entirety and substitute the following therefor.

"5. RIGHTS-OF-WAY

a. The rights of entry required for the work to be constructed under this contract, within the rights-of-way limits indicated on the drawings, have been obtained by the Government and are provided without cost to the Contractor. The Contractor shall make its own investigations to determine the conditions, restrictions, and difficulties which may be encountered in the transportation of equipment and material to and from the work site. The proposed work, including rights-of-way, as defined by these specifications and as shown on the drawings, is in compliance with all applicable Federal and state environmental laws and regulations. Upon completion of the Contractor's work, rights-of-way furnished by the Government shall be returned to its original condition prior to construction unless otherwise noted.

b. If the Contractor proposes a deviation from the Government furnished rights-of-way for his convenience, the Contractor shall notify the Contracting Officer or its representative in writing. Contractor shall not provide any permanent rights-of-way for the project. The Contractor is cautioned that any deviation to the Government furnished rights-of-way is subject to all applicable Federal and state environmental laws and regulations. Compliance with these environmental laws and regulations may require additional National Environmental Policy Act (NEPA) documents, cultural resources surveys, coordination with the Louisiana State Historical Preservation Officer, water quality certification, modification of the Federal consistency determination, etc. The Government is ultimately responsible for environmental compliance; therefore, the Government will determine the additional environmental coordination and documentation necessary for a proposed deviation to the Government furnished rights-of-way. For any environmental investigations the Government is to perform on areas outside of Government furnished rights-of-way, the Contractor shall provide sufficient rights of entry to the Government. The Contracting Officer will advise the Contractor of the additional environmental

coordination and documentation that must be completed. The Government shall be responsible for any additional environmental compliance; however, the Contractor may conduct specific tasks identified by the Government. The Government will offer advice and assistance to the Contractor in conducting these tasks. Depending on the environmental impact of the proposed deviation, obtaining the coordination and documentation may not be approved or could take as much as 180 days for approval by the Government. The Government must review, approve and ensure distribution of all environmental compliance documentation and ensure all comments on the same have been resolved before any utilization of any areas outside of the Government furnished rights-of-way. The Contractor shall reimburse the Government for actual expenses incurred for assistance in completing or attempting to complete additional environmental coordination and documentation, which expenses will not exceed one hundred thousand dollars ($100,000). There is no guarantee that environmental compliance will be obtained; therefore, the Contractor shall assume all risks and liabilities associated with pursuing a deviation. Any delays resulting from the deviation and/or the environmental coordination and documentation shall not be made the basis of any Contractor claim for increase in the contract cost and/or increase in contract time. Deviations will be at Contractor's sole risk and liability, including, but not limited to, such liabilities associated with items such as hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et. seq.), and at no cost to the Government. Government assistance in obtaining additional environmental clearances does not relieve the Contractor of responsibility for complying with other Federal, state or local licenses and permits."

2. Page 22. Add the following new paragraph after paragraph 26 as:

"27. INSPECTOR'S FIELD OFFICE

a. The Contractor shall furnish, throughout the contract period, for the exclusive use of the Government employees, a temporary waterproof building, or trailer, to be utilized as a field office. It shall be conveniently located at the site of construction and shall be independent of any building, or trailer, used by the Contractor. Toilet facilities and potable water shall be provided within the Inspector's office. It shall be equipped with approved electrical wiring, private telephone service, a telephone answering machine, fax machine, at least one ceiling lamp receptacle, at least one double convenience outlet, and the required switches and fuses, to provide 110-volt power for lighting and operating a laptop computer and printer. It shall be equipped with an air conditioning unit to provide cooling in warm or hot weather, and a heater, properly installed and vented in accordance with the National Fire Protection Association Code, for heating in cold weather, as required. The Contractor shall make the necessary arrangements to obtain or to generate the power required to operate the air conditioning unit, lights, and laptop computer and printer, and the power or fuel required for the heater, and shall bear the cost thereof. A drafting table providing a working surface having dimensions of at least 4-feet by 6-feet (which may

consist of a piece of plywood, at least 3/4-inch thick, hinged to a wall of the building with hinged legs) shall be installed in the building. The building shall have a built-in locker, extending from the floor to the ceiling, having dimensions of at least 2- feet by 5-feet, with a shelf 12-inches from the top, and one door equipped with two hinges, a hasp and a padlock. All exterior doors and window frames of the building shall be equipped with iron security guards. The door shall also be equipped with butt hinges and a cylinder lock. One draftsman's stool, two strong chairs and one desk shall be provided. The building or trailer shall conform to the following minimum requirements:

Ceiling height, not less than	6-feet 9-inches
Floor space, no less than	240 square feet
Windows, not less than	2
Doors, outside	1
Rooms	1

Screens over doors and windows; walls and ceilings shall be insulated; and interior walls finished.

b. The Contractor shall remove the building, or trailer, after completion of all work under this contract and before final acceptance thereof. No separate payment will be made for furnishing, maintaining, providing the prescribed utilities, and removing the inspector's field office, but the cost of the same shall be distributed throughout the existing bid items. In the event the Contractor fails to furnish the required facilities, the Government may elect to procure the required facilities and deduct all costs from amounts due or to become due under this contract.

c. The Contractor shall provide daily janitorial services for this and other buildings at the site throughout the life of the contract. The cost of this service shall be distributed throughout the existing bid items and there shall be no separate payment."

SECTION 01330

SUBMITTAL REGISTER. Replace the Submittal Register, pages 1 thru 3, at the end of this section with the attached revised submittal register.

SECTION 02311

1. Page 1, paragraph 1.2. In the 1st line, delete "separate".

2. Pages 3 and 4. Delete paragraphs 3.2, 3.2.1, 3.2.2, 3.2.2.1, 3.2.2.2, 3.2.3, and 3.2.4 in their entirety and substitute the following therefor:

"3.2 REMOVAL AND DISPOSAL

The existing guidewall and dolphin shown on the drawings shall be removed. Removal shall include sheet piling, timber piling, dolphin fill, timbers, piping, conduit, lights and other associated appurtenances. Treated wood materials shall be separated from other materials such as piping, conduits, etc. Temporary stockpiling of removed debris on Government Property will not be allowed. The Contractor shall pull all the sheet piling in the existing dolphin. The Contractor shall remove as much dolphin fill as possible before the steel sheet piling is removed. After the steel sheet piling is removed, the Contractor shall remove all remaining dolphin fill.

3.2.1 Cross Sections

The Contractor shall take a minimum of 2 cross sections at the existing dolphin before it is removed and 2 cross sections at the same location after the dolphin is removed. The 2 cross sections shall be perpendicular to the channel and extend from waters edge on the east side of the dolphin to the east side of the existing guidewall on the west side of the channel, i.e., the guidewall opposite the guidewall being removed so that the entire channel width is surveyed.

3.2.2 Surveys

If the Contractor's surveys indicate that the dolphin fill has not been removed to the elevations shown on Drawing No. 25 or that material has been deposited anywhere in the channel so that the existing channel width, depth and slope are reduced, the Contractor shall remove and dispose of all such material. This is required so that dolphin fill does not get left in place where the pontoon could rest upon it or so that the existing channel is not compromised.

3.2.3 Timber Pile Removal

The Contractor shall attempt to pull the timber piles with a vibratory hammer after all members which can hinder the pulling operation are removed. Diver assistance may be required for member removal. The minimum size vibratory hammer shall be a V-5 or equivalent and the minimum size crane shall be a 60-ton crane. Pile tops shall be cut as necessary to allow the vibratory hammer to grip the pile. Should the attempt to pull a pile exceed ten (10) minutes or if the pile is damaged by the pulling effort and the extractor cannot be secured to the pile, then the Contractor will be allowed to break the timber piling off at the mud line after securing approval from the Contracting Officer. Government approval to break a pile shall be required for each pile that cannot be pulled. Portions of the existing guidewall may be infested with termites. Care shall be taken when handling pieces of other timbers and trees."

SECTION 02315

1. Page 2, paragraph 1.4.6. Delete this paragraph in its entirety and substitute the following therefor: "1.4.6 Reserved"

2. Page 8, paragraph 3.2.4. Delete this paragraph in its entirety and substitute the following therefor: "3.2.4 Reserved"

SECTION 02316

1. Page 2, paragraph 1.4.6. Delete this paragraph in its entirety and substitute the following therefor: "1.4.6 Reserved"

2. Page 5, paragraph 1.8.2. Delete this paragraph in its entirety and substitute the following therefor:

"1.8.2 Handling

The method of handling piles shall be submitted for approval as required in paragraph 1.6.3. Piles shall be lifted using a cradle or multiple point pick-up to ensure that the maximum permissible camber or sweep is not exceeded due to insufficient support, except that a one-point pick-up may be used for lifting piles that are not extremely long into the driving leads. Point pick-ups shall be such as not to slip during pipe pile pick-up. Piles shall not be dragged across the ground. The Contractor shall inspect the camber, sweep and walls of piles for damage before transporting them from the site. Piles will be checked by placing them on a firm, level surface and rotating them. The maximum permissible camber and/or sweep shall be 2 inches over the length of the pile. The Contracting Officer will check piles for damages and excessive camber or sweep immediately prior to placement in the driving leads. Damaged piles or piles with camber or sweep exceeding 2 inches will be rejected for use and replaced at no additional cost to the Government."

3. Page 8, paragraph 3.2.4. Delete this paragraph in its entirety and substitute the following therefor: "3.2.4 Reserved"

SECTION 06510

Delete this section in its entirety and substitute the attached new revised Section 06510 therefore.

DRAWINGS

1. Dwgs. 3, 4, 17, 20, and 23 of 31. Delete these drawings in their entirety and substitute the attached revised Dwgs. 3, 4, 17, 20, and 23 of 31 therefor.

2. Dwg. 10 of 31, Grid 5-D. Add the following to the Notes as:

"4. IF MOLDS ARE USED TO CAST THE NEOPRENE "O" RINGS, THEN THE MOLDS SHALL BECOME GOVERNMENT PROPERTY UPON COMPLETION OF THE WORK."

SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION: INNER HARBOR NAVIGATION CANAL LOCK, SOUTHEAST GUIDEWALL AND DOLPHIN REPLACEMENT ORLEANS PARISH, LA

CONTRACTOR

SPECIFICATION NUMBER

ACTIVITY NO	TRANS-MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSIFICATION		REVIEWER	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION			GOVERNMENT ACTION		REMARKS
					DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION	ONLY		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
		1	01100-11	Aggregate Sources									X		X	*									* By ED-FG
		2	01100-12	Stone Sources									X		X	*									* By ED-FG
		3	01100-14	Insurance Schedule	X									X											
		4	01100-19	Notice to Navigation				X						x											
		5	02311-1.4.1	Pile Driving Equipment	X										X	*									* By ED-GE, ED-FS
		6	02311-3.2.1.4	Debris Testing	X									X		*									*By ED-GE
		7	02411-1.5.1	Sheet Pile Equipment	X										X	*									* By ED-GE, ED-FS
		8	02411-1.5.2	Steel Sheet Piling	X	X									X	*									* By ED-GE, ED-FS
		9	02450-1.5	Diving Accident Prevention Plan	X		X				X				X										
		10	02450-3.5	Divers Log		X		X			X			X											
		11	02485-1.5.1	Dolphin Fill	X										X	*									* By ED-FG, ED-GM
		13	02485-1.5.2	Anti-Washout Admixtures	x		x								X	*									* By ED-GM
		14	02485-1.5.3	Mixing / Placement Equipment	X	X									X	*									* By ED-GM
		15	02485-1.5.1.4	Temporary Bracing	X	X									x										
		16	02490-1.5.1	Commercial Availability	X									X											Solicitation DACW29-02-B-0054
		17	02490-1.5.2	Technical Specifications	X									X											Amendment No. 0006
		18	02490-1.5.3	Quality Control Records	X					X				X											Page 7 of 22

NOTE: THIS REGISTER IS NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A COMPREHENSIVE REGISTER.

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SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION: INNER HARBOR NAVIGATION CANAL LOCK, SOUTHEAST GUIDEWALL AND DOLPHIN REPLACEMENT ORLEANS PARISH, LA

CONTRACTOR

SPECIFICATION NUMBER

ACTIVITY NO	TRANSMITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSIFICATION		REVIEWER	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION			GOVERNMENT ACTION		REMARKS
					DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION ONLY	GOVERNMENT APPROVED		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
		19	02510-1.5.1	Installation Plan	X	X									X										
		20	02510-1.5.1	Equipment		X	X								X										
		21	02510-1.5.1	Grout Stops			X	X							X										
		22	02510-3.1.2	Asbuilts	X	X								X											
		23	02510-3.1.2	Ballast		X								X											
		24	02510-3.1.2	Placing Plan		X								X											
		25	03101-1.6.1	Manufacturer's Literature	X									X											
		26	03101-1.6.1	Shop Drawings		X								X											
		27	03101-1.6.1	Field Inspection Reports						X				X											
		28	03210-1.5.1	Shop Drawings		X								X											
		29	03210-1.5.2	Test Reports						X				X											
		30	03210-1.5.3	Material Identification						X				X											
		31	03301-1.5.1.1	Concrete Mixture Proportions	X										X										
		32	03301-1.5.1.2	Batch Plant Data	X									X											
		30	03301-1.5.1.3	Concrete Mixer Data	X									X											
		31	03301-1.5.2	Statements					X						X										
		32	03301-1.5.3	Reports						X					X										
		33	03301-1.5.4	Test Reports						X					X										Solicitation DACW29-02-B-0054
		34	03301-1.5.5	Certificates							X				X										Amendment No. 0006
		35	03301-1.5.6	Samples								X		X											Page 8 of 22

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SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION: INNER HARBOR NAVIGATION CANAL LOCK, SOUTHEAST GUIDEWALL AND DOLPHIN REPLACEMENT ORLEANS PARISH, LA

CONTRACTOR

SPECIFICATION NUMBER

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					DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION ONLY	GOVERNMENT APPROVED		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
		36	03303-1.5	Concrete Admixture Data	X										X										
		37	05500-1.4	Connectors	X										X										
		38	05500-3.1.7	Concrete Anchors	X					X				X											
		39	06510-1.6	Plastic Wales	X					X					X	*									* By ED-GE
		40	09940-1.5.1.1	Qualifications & Experience							X			X											
		41	09940-1.5.1.2	Safety and Health Statements					X					X											
		42	09940-1.5.3.3	Paint and Thinner Samples	X		X			X		X			X										
		43	09940-1.5.4	Painting Plan	X										X										
		44	09940-1.8.1.8	Airborne Samples						X		X		X											
		45	09940-3.4	Color Chips	X										X										
		46	16120-1.4	Installation Instructions	X		X								X										
		47	16375-1.3.1	Manufacturer's catalogue Data	X		X								X										
		48	16375-1.3.2	Material, Equipment, & Fixture List	X		X								X										
		49	16375-1.3.3	Asbuilts	X		X								X										
		50	16500-1.4	Luminaries, Navigation Light & Low	X										X										Solicitation DACW29-02-B-0054
																									Amendment No. 0006
																									Page 9 of 22

ENG FORM 4288-R, (MAR 95)

PAGE 3 OF 3 PAGES

(Proponent CEMP-CE)

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Section Table of Contents

SECTION 06510 - PLASTIC WALES, POSTS AND BLOCKS AND TREATED TIMBERS

SECTION 06510 - PLASTIC WALES, POSTS AND BLOCKS AND TREATED TIMBERS

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, materials and equipment; and performing all operations in connection with providing and installing of fiberglass reinforced plastic composite marine timber (plastic wales, posts and blocks) and treated timbers for the floating guidewall construction as specified herein and shown on the drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section 02510, "FLOATING GUIDEWALL CONSTRUCTION"

1.3 MEASUREMENT

No separate measurement or payment will be made for work associated with plastic wales, posts and blocks and treated timbers.

1.4 PAYMENT

Payment for plastic wales, posts and blocks and treated timbers will be included in the contract lump sum price for “Fender System”. Price and payment shall constitute full compensation for all equipment, labor and material costs and cost of all items incidental to furnishing, handling, testing, furnishing samples, installing and splicing the plastic wales and treated timbers as well as the costs of any damage caused by the Contractor or any other parties as stated in the General Provision entitled "DAMAGE TO WORK".

1.5 REFERENCES

The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D 450	(1996) Coal Tar Pitch Used in Roofing, Dampproofing and Waterproofing
ASTM D570	(1999) Water Absorption of Plastics

ASTM D638	(1999) Tensile Properties of Plastics
ASTM D695	(1996) Compressive Properties of Rigid Plastics
ASTM D790	(1999) Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D4329	(1999) Fluorescent UV Exposure of Plastics
ASTM D4476	(1997) Flexural Properties of Fiber Reinforced Pultruded Plastic Rods

AMERICAN WOOD PRESERVER'S ASSOCIATION (AWPA) STANDARDS.

AWPA A 1	(1998) Analysis of Creosote and Oil-Type Preservatives
AWPA A 2	(1992) Analysis of Waterborne Preservatives and Fire-Retardant Formulations
AWPA A 4	(1998) Sampling Wood Preservatives
AWPA A 6	(1993) Method For Determination of Oil-Type Preservatives and Water in Wood
AWPA A 7	(1997) Wet Ashing Procedures for Preparing Wood for Chemical Analysis
AWPA C1	(1999) All Timber Products-Preservative Treatment by Pressure Processes
AWPA M2	(1997) Inspection of Treated Timber Products
AWPA M4	(1999) Care of Preservative Treated Wood Products
AWPA P1/P13	(1995) Coal Tar Creosote for Land, Fresh Water and Marine (Coastal Water) Use

1.6 SUBMITTALS

The following shall be submitted in accordance with Section 01330 entitled SUBMITTAL PROCEDURES. The Contractor shall submit, for approval, manufacture’s literature with description and supporting data certifying that the proposed material meets the requirements of these specifications, including Tables I,

II and III, and is suitable for the proposed application. The Contractor shall submit a statement certifying that the void test procedures were performed and the materials meet the void requirements specified herein.

1.6.1 Preservative Treatment Certificate

A certificate, including the test assay analysis, from the testing organization approved in paragraph 1.7.3 attesting that the treated timbers to be used in the work have been given the preservative treatment required by these specifications shall be submitted to the Contracting Officer prior to commencement of the work. The Quality Mark of the American Wood Preservers' Bureau (AWPB) affixed to the materials will be accepted in lieu of a certificate.

1.7 QUALITY CONTROL

The Contractor shall establish and maintain quality control for installing plastic wales and associated components to assure compliance with contract specifications and maintain records of the quality control for all construction operations including, but not limited to, the following:

(1) Accurate placement and alignment of plastic wales and splice blocks.

(2) Proper fit and attachment of wales, splice blocks, splices, etc.

(3) Accurate location and size of holes.

(4) Voids testing

(5) Treatment of timber, including depth of preservative penetration.

1.7.1 Inspection of Treated Timbers

The Contractor shall provide the necessary facilities for the proper inspection of each treated timber. Timbers to be preservative treated may be inspected by the Government prior to treatment. The timbers may be inspected at the shipping point or at the work site if so decided by the Contracting Officer. Timbers with specified variations in characteristics shall be placed in separate lots for inspection. Timbers shall be so marked or segregated into marked lots that there will be no possibility of error in assignment after they have been inspected. Timbers damaged after inspection may be subsequently rejected if damage is deemed sufficient for rejection by the Contracting Officer. All rejected timbers shall be removed as directed.

1.7.2 Inspection of the Preservative Treatment Process.

Inspection of the preservative treatment process will be in accordance with AWPA M2. The Contractor shall notify the Contracting Officer where preservative treatment

will be done not less than 10 days prior to the start of the treatment and shall provide the necessary facilities for the proper inspection of the treatment process.

1.7.3 Sampling and Testing

Sampling and testing shall be performed by an approved testing organization adequately equipped to perform such services.

1.7.3.1 Sampling

Representative samples of preservatives for testing shall be obtained from storage containers using the methods described in AWPA A4. The recovery of creosote and creosote solutions from timbers for testing shall be in accordance with extraction assay methods described in APWA M2. The procedures for the decomposition of samples of timbers which have been treated with water-borne preservatives as an initial step for the analysis of the constituents of the preservatives retained shall be as specified in AWPA A7.

1.7.3.2 Testing

Creosote, creosote solutions and water-borne preservatives shall be tested for conformance with the specifications as described in AWPA A1 and A2. The net retention and penetration of preservatives shall be determined as specified in AWPA M2 and the additional requirements specified herein. The net retention of creosote or creosote solutions shall be verified by extraction assay in accordance with APWA A6.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Plastic Wales, Posts and Blocks

The fiberglass reinforced plastic composite marine timber (plastic wales, posts and blocks) shall be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Additional or better features which are not specifically prohibited by this specification, but which are a part of manufacturer's standard commercial product, shall be included in the plastic wales and splice blocks being furnished.

2.1.1.1 Plastic

The plastic shall be a mixture of one or more of the following recycled post consumer or post industrial thermoplastics: High density polyethylene, medium density polyethylene, low density polyethylene, and polypropylene. The plastic shall have a

dense, exterior that is continuous and homogenous throughout the length and perimeter of the plastic wale and girt. This plastic shall be mixed with the appropriate colorants, UV inhibitors and antioxidants, so that the resulting plastic portion of the product shall conform to the characteristics as listed in Table I.

2.1.1.2 Reinforcing

The plastic composite marine timber shall be reinforced with deformed fiberglass elements. The reinforcing elements shall conform to the characteristics found in Table II. The reinforcing elements shall be arranged in a square pattern, as described in Table III, within the plastic composite marine timber (plastic wales, posts and blocks). Each plastic wales, posts and blocks shall have a quantity of four (4) fiberglass reinforcing elements with a minimum diameter of 1.25-inches each. Each individual element shall typically run the entire length of the timber, terminating flush with the ends, with the rebar exposed. Plastic or fiberglass may be used to support the reinforcing elements of the plastic composite marine timber. However, supports for the reinforcing elements of the plastic composite marine timber shall extend no closer than the outer edge of the reinforcing elements unless they have the same wearability as the outer plastic. Conversely, supports for the reinforcing elements of a different wearability as the outer plastic may be used provided they are drilled back to the outer edge of the elements and the resulting voids filled with a plastic or plugs with the same wearability as the exterior plastic, except as allowed herein. If plugs are provided, a waterproof adhesive suitable for the environment must be used to secure the plug to the plastic composite marine timber. If the plugs are of a different wearability from the outer plastic, then the Contractor shall submit for approval (a) manufacturer's literature on the plastic plugs and adhesive indicating compliance with the above and (b) a certification from the manufacturer of the plastic composite marine timbers that the plugs and adhesive are compatible with their product, are suitable for the applications, and will not diminish any of the minimum requirements specified in this section. Wood or metals shall not be used in the plastic composite marine timbers. However, metal elements may be used within the reinforcing elements provided the metal cross section area is not larger than 16 gage diameter (0.062 inch squared) per reinforcing element. The reinforcing elements shall be designed to enable residual stresses to be relieved.

2.1.1.3 General Configuration

The plastic composite marine timber shall have a square cross section with radiused corners. Both ends shall be cut square. It shall be seamless with a smooth outer skin.

TABLE I

PLASTIC (TYPICAL PROPERTIES)

Ultraviolet (ASTM D4329)	No more than 10% change in Shore D durometer hardness after 500 hours exposure
Tensile Strength (ASTM D638)	Minimum 500 psi at break
Compressive Modulus of Elasticity (ASTM D695)	Minimum 40,000 psi

2.1.1.3.1 For Fiberglass Reinforcing Elements

TABLE II REINFORCING

Flexural Strength (ASTM D 790 or ASTM D4476)	Flexural Strength	Minimum 70,000 psi
Compressive Properties (ASTM D695)	Compressive Strength	Minimum 40,000 psi

2.1.1.3.2 Dimensions

Dimensions for the fiberglass reinforced plastic composite marine timber shall be as shown in Table III.

TABLE III DIMENSIONS

Marine Timber	Dimension	Tolerance
Width	8 inches	+/-0.25 inches
Height	12.00 inches	+/-0.25 inches
Corner radius	1.875 inches	+0.375 inches or –1.75 inches
Distance from outer surface to rebar elements	2.00 inches	+/-1.0 inches

2.1.1.4 Reparability

The outer skin shall be repairable if chipped or spalled by using a commercially available roofing compound in accordance with the plastic wales, posts and blocks

manufacturer's recommendation or other similar procedure recommended by the manufacturer.

2.1.1.5 Owners Field Guide

With the shipment of the first plastic composite marine timber (plastic wales and splice blocks), the manufacturer shall provide two copies of its owners field guide. This guide shall include information and diagrams describing and illustrating the recommended means for handling, placing, installing, and finishing the plastic wales and splice blocks.

2.1.1.6 Performance

The plastic wales and splice blocks shall be designed to provide the following structural characteristics when using the material properties shown in Tables I and II.

Stiffness (EI) Y-Y	$\geq$ 1.29 x 10^8 lb. in^2
Stiffness (EI) X-X	$\geq$ 4.70 x 10^8 lb·in^2
Yield Stress in Bending X-X	$\geq$4,800 psi
Yield Stress in Bending Y-Y	$\geq$4,125 psi
Weight	26-37 lb./ft.

2.1.1.7 Interchangeability

All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

2.1.1.8 Identification Markings

Each individual plastic wale and girt shall be clearly marked with the manufacturers name and distinct serial number near each end of the product.

2.1.1.9 Cracking

Each plastic wale and girt shall be inspected for cracks prior to installation. The plastic wales and splice blocks shall be inspected for cracks again prior to final acceptance of the work. Cracking of plastic wales and splice blocks will be cause for rejection. The Contractor shall be responsible for all costs incurred to replace the rejected plastic wales and splice blocks.

2.1.2 Hardware and Miscellaneous Items

Hardware and miscellaneous items shall conform to the requirements specified in Section 05500, "METALS".

2.1.3 Quality Control Provisions for Plastic Timber Wales and Splice Blocks

2.1.3.1 Quality Control

The manufacturer shall have in place a Quality Control Program that will ensure the plastic timber wales and splice blocks are manufactured to the specifications noted in paragraph 2.1.

2.1.3.2 Examination

Each complete plastic timber wale and splice block will be examined by the Contracting Officer's Representative for compliance with the appropriate requirements of paragraph 2.1. This inspection will encompass all visual examinations and dimensional measurements. Records maintained by the manufacturer shall be inspected to ensure that the materials used in construction of all contract items conform to the requirements. In particular, it shall be verified that the material requirements of Tables I and II, and manufacturing tolerances found in Table III are met. Noncompliance with any specified requirements or presence of one or more major defects preventing or lessening maximum efficiency shall constitute cause for rejection.

2.1.3.3 Physical and Mechanical Tests

The manufacturer shall provide documentation showing that the tests described in paragraph 2.1.3.3.1 have been performed, and that the test results meet the requirements of this specification. The tests shall be conducted entirely by a testing laboratory independent of the manufacturer, under the direction of a testing engineer. The manufacturer shall also provide a copy of the test report that shows the results of the physical and mechanical tests listed in Table I. For these tests, all test specimens must be extracted from a full-scale product with the same cross-sectional dimensions and reinforcing as the fiberglass reinforced plastic composite marine timbers that will be used in the floating guidewall construction. Test specimens shall not be made by injection or compression molding or calendaring, but shall be made from plastic cut from the full-scale product (except those tests that require the entire cross section of the product to be tested).

2.1.3.3.1 Test Procedure

The product shall be tested in bending, to quantitatively determine the flexural stiffness and the bending yield stress. The product shall be tested full-scale. Scale model tests are not acceptable. The test configuration shall be three point bending (the product shall be simply supported at two locations, with the load applied equidistant from the two supports). The supported span to depth ratio shall be a minimum of 16:1. The product shall be loaded at least until the yield stress specified in paragraph 2.1.1.6 is reached, or until failure if so desired. During the test, load and

corresponding deflection data shall be recorded. Deflection shall be measured at the load point, and at two other points, each equidistant between the supports and the load. Deflection shall be measured at least at 1,000 pound load increments.

2.1.3.3.2 Test Results

Load and deflection data acquired during the test shall be used to calculate the stiffness (EI), and the bending stress. Stiffness (EI) shall be reported as the average of the stiffness at all measurement locations, between zero load and half the load corresponding to the yield stress specified in paragraph 2.1.1.6. The specified minimum yield stress in bending shall be reached before failure of the product. Stress shall be calculated at the load point, on the tension side of the plastic timber.

2.1.3.3.3 Void Test Requirements

After fabrication of the entire contract quantity but prior to shipping to the job site, the Contractor shall perform all void testing. The Contractor shall provide the Government with a 30 day advance notification of any void testing by specifying the proposed date, time and location of the void tests. All void testing shall be witnessed by the Contracting Officer's Representative.

2.1.3.3.3.1 Test Specimen

Two full size plastic wales, at least 10 feet long of each size (based on cross-sectional dimensions) specified, shall be selected as samples by the Contracting Officer's Representative for void tests on every 2,500 linear feet, or fraction thereof, of said plastic wales, whichever is smaller.

2.1.3.3.3.2 Exterior Voids

The samples will be examined for exterior voids first. The exterior voids shall conform to the following requirements:

(1) The maximum dimension of any void at each exposed end shall not exceed ½ inch.

(2) The total number of voids with a maximum dimension greater than ¼-inch at each exposed end shall not exceed 8.

2.1.3.3.3.3 Additional Testing for Exterior Voids

If a sample examined for exterior voids fails to conform to either requirement above, a retest shall be performed on an additional 2 samples selected by the Contracting Officer's Representative. If either sample in the retest fails to conform to either requirement, the entire 2,500 linear feet of plastic wales represented by the samples will be rejected.

2.1.3.3.3.4 Interior Voids

After passing the requirements above, the samples shall be cut into 12-inch long segments cut perpendicular to the length by the Contractor and examined for interior voids. Each 12-inch segment shall be labeled prior to cutting. The cut sections of each segment shall conform to the following requirements:

(1) The maximum dimension of any void in a cut section shall not exceed 1-inch.

(2) The total area of voids greater than ¼-inch in a cut section shall not exceed 5 percent of the total cross-sectional area.

2.1.3.3.3.5 Additional Testing for Interior Voids

If a cut section examined for interior voids fails to conform to either requirement above, a retest shall be performed on an additional 2 samples selected by the Contracting Officer's Representative. If a cut section in the retest fails to conform to either requirement, the entire 2,500 linear feet of plastic wales represented by the samples will be rejected.

2.1.3.3.3.6 Test Results

Test results shall be reported in writing to the Government within 48 hours and all samples (segments) tested for voids shall be shipped with the production wales for on-site verification.

2.1.4 Rubbing Timbers and Timber Posts and Bumpers

Timbers shall be dressed S4S Dense Select Structural Southern Pine or Douglas Fir as specified by species and grade in NFPA 01. The preservative treatment for the timbers shall be in accordance with AWPA C1, except as modified and supplemented by AWPA C3. Timbers shall receive a treatment of "clean" coal tar creosote preservative with a minimum net retention of 20 pounds per cubic foot. The standards for coal tar creosote shall be in accordance with AWPA 6P1/P13, except that the maximum allowable amount of matter insoluble in xylene shall be 0.1% for new creosote and 0.5% for creosote in use.

2.1.5 Coal Tar Pitch

Pitch for brush treatment of timbers shall conform to ASTM D 450.

PART 3 EXECUTION

3.1 HANDLING

Special care, including spreader bars, special lifting hooks, etc., shall be taken in supporting the timbers, plastic wales and splice blocks to prevent the inducing of excessive bending stresses or deflections in the timbers, plastic wales and splice blocks. Timbers, plastic wales and splice blocks shall be carefully handled without dropping, breaking of outer fibers or penetrating the surface with tools. Peaveys, cant hooks, pikes and other pointed tools shall not be used in handling the timbers, plastic wales or splice blocks.

3.2 INSTALLATION

Installation of the timbers, plastic wales and splice blocks shall be in accordance with manufacturer's guidelines as noted in its owner’s field guide including special blades, etc. to facilitate accurate cuts and a safe work environment.

3.3 TREATED TIMBERS

All timbers shall be cut and framed so that joints will have a close fit over the contact surfaces. Timbers shall be secured in alignment. Open joints are not acceptable. Holes for bolts shall be bored 1/16-inch larger than the diameter of the bolt. All dome-head bolts shall be countersunk. In so far as practicable, cutting of timbers and boring of holes shall be done prior to preservative treatment. Cuts, abrasions, bored holes and sawed surfaces of piles and timbers shall be carefully trimmed and field treated with a solution compatible with the preservative treatment in accordance with AWPA standard M4. Where holes are bored and not used for bolts, the holes shall be tightly closed with a treated plug. Holes shall not be bored and spikes shall not be driven into timbers to support scaffolding. In the event that any material is damaged during installation, such damaged material shall be removed and replaced at the expense of the Contractor.